

## **Chapter-5**

# **TEACHING TOOLS**

## CONTENTS

Introduction .....	219
Objectives .....	219
1. The Teaching Tools .....	220
2. Selecting the Audio Visual Material .....	222
3. Planning to Use the Material .....	222
4. Preparing for the Audio-Visual Activities .....	223
5. Kinds of Audio Visual Materials .....	224
6. Activities .....	235
7. Exercise .....	236
8. Self Assessment Questions .....	236
9. Suggested Readings .....	237
10. References .....	237
11. Web References .....	238

## **INTRODUCTION**

Teaching tools are teaching aids that classroom teachers employ to help their students learn quickly and thoroughly. A teaching tool can be as simple as a chalkboard or as complex as a computer program. Because every individual learns in a different way, teachers rely on these tools to explain concepts to students with a wide variety of learning needs. Teaching tools are crucial for educators as they are keys in differentiating instruction for all types of learners.

As we all know that today's age is the age of science and technology. The teaching learning programs have also been affected by it. The process of teaching - learning depends upon the different type of teaching tools available in the classroom.

## **OBJECTIVES**

After study the material, it is hoped that you will be able to:

1. Explain the teaching tools
2. Identify the audio-video materials
3. Discuss kinds of audio visual aids.
4. Pin points the preparation for audio- visual activities.
5. Evaluate the planning to use the material

# 1. THE TEACHING TOOLS

Every individual has the tendency to forget. Proper use of teaching tools helps to retain more concepts permanently. Students can learn better when they are motivated properly through different teaching tools.

Teaching tools develop the proper image when the students see, hear taste and smell properly. Teaching tools provide complete example for conceptual thinking. The teaching tools create the environment of interest for the students. Teaching tools helps to increase the vocabulary of the students.

Teaching tools helps the teacher to get sometime and make learning permanent. Teaching tools provide direct experience to the students.

## (i) **Need and Importance**

Teaching aids play very important role in Teaching- Learning process. Importance of Teaching aids are as follows:

- 1) **Motivation:** Teaching aids motivate the students so that they can learn better.
- 2) **Clarification:** Through teaching aids, the teacher clarifies the subject matter more easily.
- 3) **Discouragement of Cramming:** Teaching aids can facilitate the proper understanding to the students which discourage the act of cramming.
- 4) **Increase the Vocabulary:** Teaching aids helps to increase the vocabulary of the students more effectively.
- 5) **Saves Time and Money:** Teaching aids are helpful to save time and money
- 6) **Classroom Live and active:** Teaching aids make the classroom live and active.
- 7) **Avoids Dullness:** Teaching aids motivate the students to take active part in the classroom activities and avoid dullness.
- 8) **Direct Experience:** Teaching aids provide direct experience to the students

## (ii) **Purpose**

The Teaching aids are very purposeful. These are used:

- To supplement and enrich teachers own teaching to make teaching-learning more concrete
- To serve an instructional role in itself
- To create interest among the group
- To make teaching as an effective process

## (iii) **History**

The globe is the earliest-known teaching tool. Originating in ancient Greece, the globe has been used as an educational tool since as early as 150 B.C. The hornbook was another early teaching tool. Used in classrooms starting in the mid-1400's, the hornbook is a piece of paper containing the alphabet that was mounted on wood, bone, or in some cases leather. The chalkboard was patented in 1923 by Samuel Read Hall, and replaced the hornbook in classrooms around the world.

## (iv) **Types**

There are many aids available these days. We may classify these aids as follows:

- 1) Visual Aids
- 2) Audio Aid
- 3) Audio - Visual Aid

**1) Visual Aids**

The aids which use sense of vision are called Visual aids. For example :- actual objects, models, pictures, charts, maps, flash cards, flannel board, bulletin board, chalkboard, overhead projector, slides etc. Out of these black board and chalk are the commonest ones.

**2) Audio Aids**

The aids that involve the sense of hearing are called Audio aids. For example: - radio, tape recorder, gramophone etc.

**3) Audio - Visual Aids**

The aids which involve the sense of vision as well as hearing are called Audio- Visual aids. For example: - television, film projector, film strips etc.

Most teaching tools are visual in nature. Blackboards and whiteboards, posters, calendars, charts, drawings, and overhead projectors are all examples of visual teaching tools. This type of tool is important because many people learn best through use of visual/special thinking. Some teaching tools are aurally-based. These aural aids include recordings of spoken broadcasts and songs. Audio-visual teaching tools include film projectors, videocassettes, DVDs, and movies on the Web. Though audio-visual aids were once seen as a method for students to teach themselves, they are now considered to be educational tools rather than a replacement for teachers.

**(v) Technology-Based Tools**

Since the dawn of the technology age, computers have proved to be the most multifaceted teaching tool available. With technology like digital video presenters, power point presentations, and educational software, teachers are now able to quickly and accurately enlarge any physical visual aid, create and edit informational slides, and can ultimately provide their students with information in a faster, more comprehensive way. Computers provide an interactive educational experience that engages learners and makes the task of preparing lesson materials less time-consuming for teachers.

**(vi) Considerations**

A few considerations in this aspect are suggested, though teaching tools are crucial to successful teaching, they are not a replacement for quality teaching strategies. Instead of relying upon teaching aids to do the instruction, these tools are used as supplemental resources for educators. Many students cannot perform to their fullest potential without the use of teaching tools, but no student can produce their best work without a skilled teacher behind them. With a excess of multimedia resources available, it is important to remember that teaching tools are meant to enrich student learning, not provide it. Keeping these in view you should prepare a planner which would integrate teaching tools with teaching strategies.

## **2. SELECTING THE AUDIO VISUAL MATERIAL**

Audio-visual aids are intended to impart knowledge to the pupils through senses to ensure quick and effective learning. No wise teacher can ignore the use of aids in order to make his lesson more interesting and real. It is an admitted fact that the child learns through the senses of sight and hearing have a great share in this process. But it should always be borne in mind that these aids should be used as aids to teaching and should not replace the teacher but revolutionize the methods of teaching.

For selecting the audio visual material these points may be kept in mind.

1. Audio visual aids should be integrated with learning.
2. Should be according to the age, intelligence and experiences of the students.
3. Should be suiting the physical, psychological, intellectual and social development of the group.
4. Language should be familiar and understandable.
5. Should be accurate, truthful and realistic.
6. Should be motivational and highly informative.
7. Should be available in the need.

## **3. PLANNING TO USE THE MATERIAL**

There is need of proper planning for using effective audio visual aids for the students; Following are some suggestions which can be helpful for the planning to use the material.

1. The teacher must be trained and fully skilled in the use of the teaching aids. They should be actually taught and does not used for deco rational or ornamental value in the class.
2. While using the aid, active participation of the students should be sought.
3. The teaching aid should be adequately protected and preserved for maintaining due interest and motivation of the students.
4. The teaching aid should be within the range of immediate availability in the hour of urgent need.
5. The aid should be evaluated at regular intervals in order to know their use and effect of learning.

## 4. PREPARING FOR THE AUDIO-VISUAL ACTIVITIES

The key to preparing effective audiovisual aids is to remember that they are only aids. Their role is to add a visual dimension to the points that you made orally. They cannot make those points for you; they can only reinforce them. When you plan for audiovisual aids, follow these simple guidelines:

1. We can use them to summarize or show the sequence of content.
2. We can use them to visually interpret statistics by preparing charts and graphs that illustrate what you will say.
3. We can use them to illustrate and reinforce your support statements.
4. We can use them to add visual clarity to your concepts and ideas.
5. We can use them to focus the attention of the target group on key points.
6. We should not project copies of printed or written text. Instead, summarize the information and show only the key points on the visual aids. If the group must read every word, use handouts for reading, either before or after your presentation.
7. Do not put yourself in the role of aiding your visuals: A presentation is primarily an oral form of communication. If your only function is to read the information on your overheads or slides, the target group will become easily bored.
8. Do not use copies of your transparencies as handouts. They reinforce what you are saying-- they don't say it for you. If you want your target group to remember what you meant, you'll need to provide written text in addition to any key point summaries or charts that you need for your transparencies.
9. Do not use charts, graphs, or tables that contain more information than you want to provide. The group will have difficulty focusing on the point that you're trying to make.

## 5. KINDS OF AUDIO VISUAL MATERIALS

Teachers may wish to combine different types of media in a single presentation. The media used most often are overhead projection transparencies, flip charts, slides, blackboards, and handouts. Teachers may occasionally use videotapes and/or films.

*According to Edger Dale:* “audio visual aids are those devices by the use of which communication of ideas between persons and groups in various teaching and training situations is helped” These are also termed as multi sensory materials.

Audio visual aids are sensitive tools used in teaching and as avenues for learning. These are planned educational materials that appeal to the senses of the people and quicken learning facilities for clear understanding. A.V aids are multisensory materials which motivate and stimulate the individual. It makes dynamic learning experience more concrete realistic and clarity. It provides significant gains in thinking and reasoning. Audio visual material must be seen in their relationship to teaching as a whole and to the learning process as a whole, until the teacher understands the relationship between audio visual material and teaching learning process. Audio visual materials are produced, distributed and used as planned components of educational programs. It helps the process of learning that is motivation, classification and stimulation.

*According to Kinder S. James:* “Audio visual aids are any device which can be used to make the learning experience more concrete, more realistic and more dynamic”.

### Classifications of Audio-Visual Aids

1. **Projected aids:** Projected aids are those which require projection material or any electric power.
2. **Non-Projected aids:** Non-Projected aids are those which require no projection material or any electric power.

#### 5.1 Whiteboard/marker

Whiteboards have a smooth, shiny surface on which coloured felt tip pens can be used. Some are designed for use with water-soluble ink; more modern ones ("dry-marker" boards) must be used with special dry marker, solvent-based pens. Using the wrong kind of pen can damage the board. It is therefore important to know which type of board you are dealing with and it is a good idea to make sure no pens of the wrong kind are available near the whiteboard. Whiteboards are easier to use than chalkboards from both the agent's and the audience's point of view. The pens flow smoothly over the surface and the colours are clearer than chalk on a chalkboard. Markers for white boards must be the erasable type. It would be advisable to provide your own chalk and markers--to make sure they are available and they are the correct type. The popularity of whiteboards increased rapidly in the mid-1990s and they have become a fixture in many offices, meeting rooms, school classrooms, and other work environments.

## **Advantages**

- Whiteboard ink markings are less susceptible to external factors, such as water, because the ink adheres in a different manner than does chalk to a chalkboard. Using markers does not generate the dust that comes from using and erasing chalk, allowing their use in areas containing dust-sensitive equipment. Some who are allergic to chalk or are asthmatic use whiteboards as an alternative.
- A whiteboard can be used as the projecting medium for an overhead or video projector. This allows the person giving the presentation to fill in blanks, edit, and underline and make comments by writing directly onto the whiteboard, which in turn shows through the projected image. Proper dry wipe boards are high gloss to enable the dry marker ink to be wiped off easily and high gloss surfaces will reflect the projector light, creating a so called "hot spot", a glare back from the board. Semi-matte whiteboards are better suited for projection but more difficult to dry wipe clean.
- A whiteboard pen is easier than chalk to hold and write with. This can benefit persons with limited mobility in their hands, such as those affected by diseases such as arthritis or systemic lupus erythematosus. In addition, marking on a whiteboard takes less time, effort, and pressure than marking on a chalkboard
- Like chalkboards, whiteboards help to save paper.
- When compared to a chalkboard a whiteboard can have significantly more colors because markers have a greater range of color than chalk.

## **Disadvantages**

- Only special whiteboard markers are suitable for use on whiteboards. Using other markers that resemble whiteboard markers but contain the wrong kind of ink creates markings that are hard or impossible to remove, depending on the surface type. However, some techniques have been developed, which include filling over them using a marker with the right type of removable ink and then erasing the ink; wiping the marks with acetone or alcohol; or by using board cleaning sprays or pre packaged wipes commercially available from the whiteboard manufacturers.
- The white background can cause contrast problems for people with vision impairment. Additionally, whiteboards cause some problems for those who write left-handed as many write with their hand curved around the pen, therefore causing their hand to drag across the board, smearing the marker strokes previously made. Similarly, right-handed people have this problem with right-to-left languages, such as the very "curvy" and cursive Arabic abjad, and to a lesser extent with the Hebrew abjad (due to the square and differentiated shape of the letters). This limitation is also present with a chalkboard.
- Markers on whiteboards are generally less pressure sensitive than chalk, making it harder to draw heavier/lighter lines
- Whiteboard markers are often sealed in opaque plastics and difficult to determine the amount of ink remaining; only fading in color intensity with use. Like other contemporary markers, they can dry out with if the writing tip is uncapped for long periods of time.
- Whiteboard markers often have a pungent and strong odor (depending on brand and color) whereas chalk has a mild smell mainly from the chalk dust.

- Whiteboard markers, once dry, are disposed of and are generally non-biodegradable, having a increased impact on the environment.
- When writing on a vertical surface, most people incline markers upwards; however this impedes the flow of ink which is dependent on gravity.

## **5.2 Charts, posters, maps, graphs and models**

There are many non-projected teaching aids such as Charts, posters, maps, graphs and models. The detail of each is given below;

### **5.2.1 Charts:**

A chart is a combination of pictorial, graphic, numerical or vertical material which presents a clear visual summary. *Edgar Dale defines* charts as, “a visual symbol summarizing or comparing or contrasting or performing other helpful services in explaining subject-matter”. The main function of the chart is always to show relationships such as comparisons, relative amounts, developments, processes, classification and organization.

#### **Characteristics:**

1. Charts can be carefully stored and preserved for use in the future.
2. They have an educational value.
3. Usually the charts are teacher made.
4. Charts can be of any size.
5. Charts display specific information.
6. Easy to carry.

#### **Types of charts:**

- Picture charts
- Time charts
- Table charts
- Graphic charts
- Flow or organization charts
- Tree charts
- Pie charts

#### **Uses of charts:**

1. Motivates the students
2. Shows continuity in the process
3. Shows relationships by means of facts, figures and statistics
4. Presents matter symbolically
5. Presents abstract ideas in visual form
6. Summarizes information
7. Shows the development of structures
8. Creates problems and stimulates thinking
9. Encourages utilization of other media of communication

**Limitations of charts:**

1. If the selection of material for preparing the charts is not good they will not last long.
2. Takes up the time of the teacher if she has to prepare the chart.
3. Charts only emphasize the key points. This leaves the students in doubt, if the clarification is not clear.
4. Charts lose their charm, if it contains too much matter on it.
5. Poor use of color combination, improper spacing and margins creates confusion in the minds of the students.

**5.2.2 Posters:**

**S.L.Ahulwalia's view:** "A poster is a pictorial device designed to attract attention and communicate a story, a fact, an idea, or an image rapidly and clearly." **Good's Dictionary of Education:** A poster is a "placard, usually pictorial or decorative, utilizing an emotional appeal to convey a message aimed at reinforcing an attitude or urging a course of action".

The poster can be defined as a graphic representation of some strong emotional appeal that is carried through a combination of graphic aids like pictures, cartoons lettering and other visual arts on a placard. It aims for conveying the specific message, teaching a particular thing, giving a general idea etc. Posters exert a great influence on the observer.

**Characteristics:**

1. Brevity: Use of minimum words, i.e., four or five.
2. Idea: Idea or a feeling should be put in original form.
3. Simplicity of lay-out: It refers to the arrangement of the elements of the poster.
4. Efficient use of colors: (i) Use bold illustrations, (ii) Avoid fancy lettering style, (iii) Proper use of color,
5. Makes the poster more attractive.

**Uses of posters:**

1. Presents a single idea or a subject forcefully.
2. Publicizes important school and community events and projects.
3. Adds atmosphere to the class-room.
4. Captures attention by some attractive feature and thus convey the message attractively and quickly.
5. Motivates the class.
6. Strong lasting impression.
7. Satisfies the viewer emotionally and aesthetically.

**Limitations of Posters:**

1. Because of its impressive presentation, a poster captivates the eye, regardless of the message and is capable of being comprehended.
2. Poster is a simple and dynamic medium at a glance of presenting a message in a compact form.

3. Poster tells the story vividly with the desired effect.
4. Poster conveys a single theme.
5. The lettering if not attractive and accurate, makes the poster illegible.
6. If smudge marks makes the posters unattractive and futile.

**Suggestions for preparing Posters:**

1. Decide the theme.
2. Decide the most suitable words to provide a title or a slogan.
3. Sketch some layouts and decide on the best.
4. Gather all needed material to prepare the poster.
5. Prepare the lettering.
6. Add desired objectives.
7. Give the finishing touches and erase the smudge marks.

**5.2.3 Maps**

Maps constitute an indispensable aid in teaching many subjects like geography, history, economics and social studies. The learning of these subjects becomes unreal, inadequate and incomplete without map media. A resourceful teacher will turn the fear of map into the genuine love by motivating the students. This, however, presupposes the invariable uses of maps at every possible opportunity by the teacher in the class-room, and the possession of individual atlases (a combination of maps) by the students. Every student should also know certain elementary aspects of map preparation such as copying, enlarging and reducing, symbolizing, coloring, and preparation of key. Many students develop aversion for maps because they do not know skills relating to map preparation.

**Meaning**

Maps are called as “Encyclopedia of Man’s Existence”. The map as a record of spatial concepts tells a story as nothing else can. A map is an accurate representation plane surface in the form of a diagram drawn to scale, the details of boundaries of whole of earth’s surface, continents, countries etc. Geographical details like location of mountains, rivers, altitude of a place, contours of the earth surface and important locations can also be represented, taught and learnt accurately. Maps depict the climatic conditions, natural conditions, location etc. of certain countries and continents.

**Purpose or Uses of Maps**

1. To depict geographical features of earth’s surface and to understand the position of earth in the universe.
2. To show relationship between places
3. To furnish information concerning distances, directions, shapes and sizes.
4. To clarify descriptive materials.
5. To reduce the scale of areas and distances and thus bring the abstract concepts of size, distance and directions into the region of reality.
6. To understand the lines-boundary lines, lines of communication, lines indicating the rivers, contours, meridians and parallels.
7. To understand the colors, tints, shadows, symbols in a map or globe.

8. To understand the distinction between various types of maps such as relief, political, distribution maps.

**Richard E. Servey** states that maps can be used in a wide variety of ways to express many different statements which are listed below:-

1. With color as a basic symbol
2. Through the use of conventional or invented symbols
3. Rearranged maps
4. Three dimensional maps
5. Globe

#### **Limitations of Maps**

1. Maps should indicate accurate, well planned, well printed, wall mounted and durable.
2. Many of the maps are not visible to all the students in the class.
3. The teacher often does not take effort to teach map reading to the students.
4. Each type of map should have the relevant details.
5. If the lettering is not taken care of, it will prove futile.

#### **5.2.4 Graphs**

Graph is defined as a visual representation of numerical data. Graph is fundamentally a tool for expressing number relationships, which is much easier to visualize than can be done if the statement were made only in words and figures. It offers a judicious technique for analyzing, comparing and prophesying of facts which are vital to an intelligent study of a problem.

#### **Characteristics of graphs:**

1. Graphs are by nature a summarizing device.
2. Effective tool for comparisons and contrast or for presenting complicated facts.
3. Made according to exact specifications and depict specifically quantitative data for analysis, interpretation or comparison.
4. Graphs, being symbolic are abstract in character.
5. Self explanatory and simple.
6. Regarded as flat pictures which employ dots, lines or pictures to visualize numerical and statistical data to show statistics or relationships.

#### **Kinds of graphs**

- Line graph
- Bar graph
- Circle or pie graph
- Pictorial graph
- Flannel graph

### **Steps in Presenting Graphs, Maps, Diagrams**

Graphs, maps, diagrams are potent spark plugs because they can be ignited at the crucial moments. To ensure success the following steps may be followed:

1. Prepare students
2. Present the aid
3. Apply information
4. Test students after the aid has been presented
5. Review or reshoot the illustration if the previous step reveals misunderstanding

### **Uses of Graphs**

1. **Awareness:** The teacher should be well aware of the method of drawing of graph in a neat and accurate manner.
2. **Neatness:** The graph should be neat, clean and artistic. It should be of good quality.
3. **Accuracy:** The scales and the measurement of the graph should be accurate and intelligible to the students.
4. **Drawing and paper:** The graph should be properly drawn. The graph paper should be good. The pencil that is used should also be good.
5. **Hints:** The hints should be properly explained. The marks on the graph should be such that the students may know them by themselves.
6. **Blackboard:** The teacher may draw a graph on the black board.

### **Limitations of Graphs**

1. If the graph is not drawn neatly, it loses its purpose.
2. The teacher should be adept at drawing the graphs and presenting it properly to the students.
3. Graphs cannot be preserved for a long time if the quality of the paper is not good.
4. Graphs will not be self-explanatory, if proper hints and scale are not given.

### **5.2.5 Models**

Models can be particularly helpful in the case of buildings and other fixed structures. The construction of a poultry shed or grain store, for example, or the layout and dimensions of a fish pond, can be shown using a model, which can be assembled and taken to pieces in front of the audience.

Models of objects can be valuable additions to your presentation. When the object itself is too large or too small, a model of the object is an important substitute. Three-dimensional items give the audience an easier opportunity to grasp exactly what you are talking about. They see the dimensions and other aspects firsthand instead of in their imagination.

## **5.3 Text books**

Textbooks are books containing information about a particular subject, organized in a manner calculated to make presenting the information easier. Teachers can read a textbook to confirm or expand their personal knowledge and/or assign readings from a textbook for students to complete. Many textbooks also include quizzes or review

questions to help assess how well students have comprehended what they have read. Publishing companies often release matched pairs of textbooks with workbooks (books full of worksheets) on the same subject matter.

#### **5.4 Handouts**

Handouts are sometimes used as visual aids. This is a mistake. Avoid handouts during your presentation if at all possible. You, the presenter, are the most important thing to focus on, and handouts are distractions from you. People look at it, flip through it, waiting for their copy, hand a friend a copy, point out some item to their neighbor, doodle on it, fold it, and wonder why it is taking you so long to cover so little information. They may also wonder why they have to sit and listen to you right now when they can take this information home and read it later. At times, handouts must be used, and we will discuss how best to use them later.

#### **5.5 Projectors**

By projected aids we mean those aids where a bright light is passed through a transparent picture, and by means of a lens, an enlarged picture is thrown or projected on the screen. Projected aids mainly fall into three groups, viz; opaque projections, transparent still projections and cine projections.

The Overhead projector has opened a new dimension in communication. It represents a lot of improvement over magic lantern, slide and film projectors.

The name 'Overhead projector' comes from the fact that the projected image is behind and over the head of the speaker/teacher. In overhead projection, a transparent visual is placed on a horizontal stage on top of light source. The light passes through this transparency and then is reflected at 90° angle on the screen at the back of the speaker. The overhead projector is the most used in all a.v. aids. It projects transparencies with brilliant screen images suitable for use in a lighted room. The teacher can write or draw diagrams on the transparency while he teaches; these are projected simultaneously on the screen by the OHP.

**(i) During presentations:**

- Keep the screen above the heads of the participants.
- Keep the screen in full view of participants.
- Make sure you are not blocking any one's view when presenting.
- Darken the room appropriately by blocking out sunshine and dimming nearby.
- Turn the screen off between slides if you are going to talk for more than two.
- Talk to the audience, not to the screen.

**(ii) Purposes:**

- To develop concepts and sequences in a subject matter area
- To make marginal notes on the transparencies for the use of the teacher that can carry without exposing them to the class.
- To test students' performances, while other classmates observe
- To show relationships by means of transparent overlays in contrasting color
- To give the illusion of motion in the transparency

**(iii) Uses of Projectors:**

1. **Large image:** It projects a very large image on the screen from a minimum of projection distance.
2. **Face the class:** In this projector the image is projected over the shoulder of the teacher. Therefore, he can face the class at all times. He can maintain eye contact with the students. It helps the teacher to keep watch on the class as or indicates points of importance on the transparency.
3. **Lighted room:** O.H.P. can operate in an illuminated room. There is no need of darkening the room. It enables the teacher to develop a 'circuit of understanding' by watching expression of others.
4. **Bright image:** The lens and mirror arrangement in overhead projector makes it possible to have a bright image even in a well lighted room.
5. **Simple operation:** It is simple, easy and convenient to operate the overhead projector. It does not need separate projector operator or the instructor. It permits the teacher to face the class and at the same time operate the machine. Slides can be changed quite easily.
6. **Light weight:** The light weight of the equipment makes it portable.
7. **Class control:** The teacher can maintain complete class control and interest in a lesson by turning a switch on or off. He, while sitting on his desk, can indicate specific items on the screen by location them with his pencil on the slides.
8. **Process on the screen:** By putting a piece of ground glass over the slide space the teacher can draw a diagram sketch with pencil or wax pencil and the class can watch the process on the screen. He can also place sheets of transparent plastic over the slides for writing on them. Thus the overhead projector permits the teacher to use the screen as a blackboard.
9. **Large slide:** Due to largeness of its aperture it may allow the use of slides of the size 20 X 20 cms or 25 X 25 cms. It may facilitate the preparation of art work for slides.
10. **Use of pointer:** The teacher can use a pointer or pencil to point out important details of a slide. He has not to run about the machine to the wall to explain things to the students.
11. **Preparation and presentation of transparencies:** Transparencies can be prepared ahead of time, presented exactly when required and quickly remove, when they serve their purpose.
12. **Low cost:** Effective visuals can be made in a minimum of time and at low cost. Once a transparency is made, it is permanent. It need not be erased as in a blackboard. It can be stored for recall at any later time.
13. Easier to write on horizontal surface.
14. Permits the use of color.

**(iv) Limitations:**

1. Cannot be used for long time.
2. Writing by some types of writing pens get blotted out on plastic.
3. Transparencies create a storage problem.

(v) **Advantages:**

It permits the teacher to stand in front of the class while using the projector, thus enabling her to point out features appearing on the screen by pointing to the materials at the projector itself and at the same time, to observe the students reactions to her discussion. Gains attention of the student

## **5.6 Multimedia**

Multimedia is a term frequently heard and discussed among educational technologists today. Unless clearly defined, the term can alternately mean .a judicious mix of various mass media such as print, audio and video or it may mean the development of computer-based hardware and software packages produced on a mass scale and yet allow individualized use and learning. In essence, multimedia merges multiple levels of learning into an educational tool that allows for diversity in curricula presentation.

**According Fenrich, 1997** Multimedia is the exciting combination of computer hardware and software that allows you to integrate video, animation, audio, graphics, and test resources to develop effective presentations on an affordable desktop computer.

Multimedia is characterized by the presence of text, pictures, sound, animation and video; some or all of which are organized into some coherent program. (Phillips, 1997).

Throughout the 1980s and 1990s, the concept of multimedia took on a new meaning, as the capabilities of satellites, computers, audio and video converged to create new media with enormous potential. Combined with the advances in hardware and software, these technologies were able to provide enhanced learning facility and with attention to the specific needs of individual users. A primary application of the interactive multimedia for instruction is in an instructional situation where the learner is given control so that he/she may review the material at his or her own pace and in keeping with his/her own individual interests, needs, and cognitive processes. The basic objective of interactive multimedia material is not s much to replace the teacher as to change the teacher's role entirely. As such multimedia must be extremely well designed and sophisticated enough to mimic the best teacher, by combining in its design the various elements of the cognitive processes and the best quality of the technology. With today's multimedia courseware, once a programme has been designed and built in with the appropriate responses, it should be flexible and permit change and alteration.

Today's multimedia is a carefully woven combination of text, graphic art, sound, animation, and video elements. When you allow an end user, i.e. the viewer of a multimedia project, to control 'what' and 'when' and 'how' of the elements that are delivered and presented, it becomes interactive multimedia.

### **Benefits to Learners**

- Work at own pace and control their learning path
- Learn from an infinitely patient tutor
- Actively pursue learning and receive feedback

**Benefits to Teachers**

- Allows for creative work
- Saves time for more challenging topics
- Replaces ineffective learning activities
- Increases student contact time for discussion

**Specific uses of multimedia include:**

- Drill and practice to master basic skills
- The development of writing skills
- Problem solving
- Understanding abstract mathematics and science concepts
- Simulation in science and mathematics
- Manipulation of data
- Acquisition of computer Skills for general Purposes, and for business and vocational training
- Access and communication to understand populations and students
- Access for teachers and students in remote locations
- Individualized and cooperative learning
- Management and administration of classroom activities

For further details please visit these Internet links:

[http://www.unesco.org/education/nfsunesco/pdf/LESTAG\\_E.PDF](http://www.unesco.org/education/nfsunesco/pdf/LESTAG_E.PDF)  
[http://www.ehow.com/about\\_5108016\\_types-audiovisual-aids-used-teaching.html](http://www.ehow.com/about_5108016_types-audiovisual-aids-used-teaching.html)  
[http://vedyadhara.ignou.ac.in/wiki/images/8/83/ES-201\(Unit-7\).pdf](http://vedyadhara.ignou.ac.in/wiki/images/8/83/ES-201(Unit-7).pdf)

**Conclusion:**

The significance of Audio Visual aids are as under:

1. Inculcating scientific attitude.
2. Satisfy curricular needs.
3. Best attention compellers.
4. Economic in terms of time and verbalism.
5. Enhance effective learning.
6. Effective retaining of the content by the students.
7. Reduce meaningless and extra verbalism on the part of teacher.
8. Pupils get opportunity to correct misconceptions.
9. Bringing vivid reality into classroom.
10. Natural and easier way of learning.
11. Impart first-hand experiences to students.
12. Avoiding monotony.

## 6. ACTIVITIES

1. Write below a working definition of teaching tools.

---

---

---

2. Prepare a chart showing non-projected aids in teaching.

3. List below the latest technological based teaching aids.

---

---

---

4. Draw a diagram showing the preparation of audio visual activities.

5. Write below four advantages of the following:

Multimedia:

---

---

---

Charts:

---

---

---

Projectors:

---

---

---

Models:

---

---

---

---

## 7. EXERCISE

Hopefully you have studied the referred material, now please answer the following questions.

1. Explain the need and importance of teaching tools in education.
2. Offer a working definition of teaching aids.
3. “Teaching aids make the classroom live and active”. Discuss.
4. “Audio visual aids are those devices by the use of which communication of ideas between persons and groups in various teaching and training situations is helped” Discuss the statement of Edger Dale.
5. Highlight the problems in using projectors in the classrooms.

## 8. SELF ASSESSMENT QUESTIONS

- Q. 1 Describe the purpose of teaching tools and how many types are there of teaching tools?
- Q. 2 Discuss the use of different kinds of projected and non-projected aids during lecture.
- Q. 3 Write down the advantages and disadvantages of multimedia.
- Q. 4 Write short notes on:
  - a. Textbooks
  - b. Handouts
  - c. Charts
  - d. Models
  - e. Whiteboard
- Q. 5 Critically examine the role of maps and posters in making lesson easy and interesting for the learner.
- Q. 6 Which points may be kept in mind while selecting audio visual aids for teaching?
- Q. 7 What steps are required for preparing effective audiovisual aids?

## 9. SUGGESTED READINGS

1. Bates, Anthony (1999) Broadcasting in Education: an evaluation land on: constable and company limited.
2. Brown, Stephen (2002) video cassettes. In A.W.Bates (ed) the role of technology in distance education. New York: st. Martin, s press.
3. Hawk ridge, D (2005) New information in education technology. London: Croom Helm.
4. Ralph, C. (1999), Audio-Visual Handbook, London, University of London press Ltd. P.11
5. Romiszowski, A.J. (1992), The selection and Use of Instructional Media a Systems Approach, London, Kogan Page. P. 65

## 10. REFERENCES

- Aggarwal J.C. (1996).Essentials of Educational Technology, New Delhi: Vikas Publishing House Pvt.Ltd.
- Edger, Dale (1969).Audio Visual Methods in teaching (4<sup>th</sup>edition) Illinois: The Dryden press Inc. Hinsdale.
- Adewoyin, J.A. (1991). *Introduction to EducationalTechnology*. Lagos: John Lad PublishersLtd.
- Ibeneme, O.T. (2000). Provision and utilization of instructional equipment for teaching and learning science and technology in *Issues in Educational Journal*, 1: 139-144.
- Rays, R. & Thomas, R. (1973). Consideration for teachers using manipulative materials. *In the National Council of Teachers of Mathematics Laboratory*. Inc. Virginia, pp. 101-108.
- Okeke, C.C. (1990). Educational technology and primary science learning: Implications for Nigeria's technology emancipation Jotter 2(2) Mubu. *The Technology Writers Assoc of Nigeria*.
- Salomon, G. (1976). A cognitive approach to media. *Educational Technology*, 16, 25-28.

## 11. WEB REFERENCES

- <http://avaudiovisualaids.blogspot.com/2010/10/av-aids-in-teaching.html>.
- <http://www.smallstock.info/info/comm/audio-visual.htm#range>.
- <http://www3.uakron.edu/schlcomm/Turner/avbenfts.htm>.
- [http://www.ehow.com/how\\_2099990\\_work-teaching-aids.html](http://www.ehow.com/how_2099990_work-teaching-aids.html).
- [http://www.ehow.com/video\\_4950111\\_audiovisual-aids-teaching.html](http://www.ehow.com/video_4950111_audiovisual-aids-teaching.html)
- [http://www.2myprofessor.com/Common/guidelines\\_for\\_using\\_audiovisual.htm](http://www.2myprofessor.com/Common/guidelines_for_using_audiovisual.htm)
- <http://en.wikipedia.org/wiki/Textbook>.
- [http://religionmanuals.tpub.com/14229/css/14229\\_320.htm](http://religionmanuals.tpub.com/14229/css/14229_320.htm)
- [http://www.teachervision.fen.com/curriculum-planning/new\\_teacher/48347.html?page=2&detoured=1](http://www.teachervision.fen.com/curriculum-planning/new_teacher/48347.html?page=2&detoured=1)
- <http://www.indiastudychannel.com/resources/120148-Teaching-Aids-Their-Needs-Types-Importance.aspx>
- Types of Teaching Aids | eHow.com [http://www.ehow.com/list\\_6100903\\_types-teaching-aids.html#ixzz1gqfG5oo1](http://www.ehow.com/list_6100903_types-teaching-aids.html#ixzz1gqfG5oo1)
- <http://www.scribd.com/doc/11631190/6-Effective-Use-of-Audio-Visual-Aids>
- [http://59.163.61.3:8080/GRATEST/SHOWTEXTFILE.do?page\\_id+user\\_image&user\\_image\\_id=1020](http://59.163.61.3:8080/GRATEST/SHOWTEXTFILE.do?page_id+user_image&user_image_id=1020)